NOTES.

THOSE who take a great interest in the welfare of our Colonies will be glad to hear that the Queen has been pleased to appoint General Sir Henry Wylie Norman (Chairman), Sir Edward Grey, Bart., and Sir David Barbour, to be Commissioners to inquire into the conditions and prospects of the West India Sugar-Growing Colonies; and Mr. Sydney Olivier to be their Secretary. Mr. Daniel Morris, Assistant Director of the Royal Gardens, Kew, will accompany the Commission as expert adviser in botanical and agricultural questions. The appointment of Mr. Daniel Morris as scientific adviser is a proof that Kew has been working for the last quarter of a century on the right lines, and that its policy is a sound one. Of all the Colonies in the West Indies, Jamaica is the only one in a fairly prosperous condition. This has been brought about mainly by the work of the Botanical Department, and the encouragement given by it to improve agricultural methods and introduce new industries. The Commission starts early in January, and will be away altogether about four months. It is regarded as one of the strongest that has ever been sent from this country.

AT the annual meeting of the Paris Academy of Sciences, on Monday, an Arago medal was awarded to Lord Kelvin in honour of the jubilee of his professorship in Glasgow University. M. Cornu (the President) is reported by the *Times* correspondent to have referred in glowing terms to the celebration at Glasgow. "Nothing," he said, "was more touching than the number and unanimity of the testimonies offered from all parts of the world to this descendant of a family of Irish farmers, who by his intellectual power has gained universal renown, and has earned from the suffrages of his admirers the highest scientific dignities, and from the Government of his country the highest social rank. Nothing is more consoling for the future than the spectacle of these honours rendered by delegates of all nations to great men of science like Lord Kelvin and Pasteur, who so worthily represent science in its loftiest and, at the same time, most beneficent aspect. Modern nations, though crushed by the yoke of material interest and by the barbarous law of blood and iron, know how on great occasions to raise their eyes towards the serene regions above animosities and covetousness, and to honour in unison the great men whose labours increase the common patrimony of intelligence and their country's prestige, as well as the welfare of mankind."

PROF. ARTHUR SCHUSTER announces to us the discovery of a somewhat important new law, connecting the wave-lengths of different lines of the same element. If the lines of an element be divided into series according to Kayser and Runge, the law may be enunciated as follows: "The difference between the frequency of the fundamental vibration and the frequency towards which the lines of the principal series converge, gives the convergence frequency of the two subordinate series." Prof. Schuster finds that the law holds in all the cases for which Kayser and Runge have established the existence of a principal and subordinate series, *i.e.* for the alkalis and the two constituents of cleveite gas.

SEVERAL communications on the recent earthquake will be found in other columns of this issue of NATURE. As observations of the times at which the disturbances were felt are of importance, we add that Mr. Alderman Andrews, of Coventry, informs us that he was awakened by a loud rumbling noise at 5h. 35¼m. Mr. George J. Burch, of Oxford, did not note the exact time, but he carefully observed the phenomena. He says: "I was awakened by the hooter at 5.30, and had not gone to sleep again. About ten minutes later I was aroused by a movement of the door, as if some one was about to come in, but became instantly aware that the sounds proceeded from the whole of that side of the room. Immediately after, there was a heaving motion of the bed, as if powerful hands had gently raised the mattress slightly on that side, and let it drop. By this time I was sitting up, and distinctly felt the room rock two or three times like a small boat when a steam-launch has passed at some little distance. This was followed by a sudden strong lateral vibration lasting several seconds. There was a good deal of rumbling noise at this time, undoubtedly due, to a great extent, to the creaking of the house and rattling of the furniture, but whether entirely so or not, I am not able to say. Taking all things into consideration, I conclude that the line of the shock was north-east and south-west, and, judging from the sensation, it appeared to come from the north-east."

THE tercentenary of the birth of Descartes was celebrated at Tours, on Monday last, by the local Archæological Society.

M. LIARD, the Chief of the University Department of the French Ministry of Education, has been elected a member of the Academy of Moral Sciences, in succession to the late M. Jules Simon.

WE learn from the *British Medical Journal* that the Czar of Russia has conferred on M. Gérard, Director of the Paris Municipal Laboratory, the Cross of the Commander of the Order of St. Anne. The Cross of St. Stanislas has been conferred upon Dr. Bordas, sub-Director of the Laboratory, and Dr. Bertillon, Director of the Anthropometric service.

REFERRING to the decoration which Dr. Roux has just received from the Emperor of Germany, the Paris correspondent of the *Times* recalls the fact that "two years ago Pasteur was offered the highest German decoration which the Emperor could confer, but the great investigator refused the honour. The Emperor was apparently touched and certainly was not offended, for he has now decorated the famous Dr. Roux, the discoverer with Dr. Behring (who, moreover, be it said to the honour of the French Government, received at its hands a decoration which was approved on both sides the Rhine) of the vaccine against diphtheria, and the intimate friend and successor of Pasteur. Dr. Roux has accepted the honour, although hasty scruples of loyalty to his master might for a moment have caused him to hesitate. To a reporter of the *Matin* Dr. Roux has explained—as if explanation were necessary—his decision to accept this decoration. 'Pasteur,' he said, 'was Pasteur. His decoration had an importance and significance quite other than that which mine has or possibly can have. And then, no doubt, Pasteur had his reasons, which I have not—special memories, for instance, of 1870. In a word, he could permit himself to assume towards the German Emperor an attitude that for me is out of the question, for I repeat he had that reason which excuses him—he was Pasteur. What was extremely fine on his part, and was everywhere approved, would be incomprehensible on the part of another, and would be blamed as coming from me.' Nothing could be more proper, and the whole incident does as much honour to the modest but distinguished investigator as to the Emperor who recognises his pre-eminence."

THE *Lancet* publishes the following interesting information received from its correspondent at Rome:—"The week has witnessed one of those pleasant demonstrations of the truly fraternal spirit which scientific investigation evokes and encourages among its accredited votaries. Prof. Grassi, on whom the Royal Society of London conferred the Darwin medal for original work in illustration of the theory of evolution, was entertained at dinner by his colleagues of the Faculty of Sciences of the School of San Pietro in Vincoli and of the Faculty of Medicine. Representatives of all the fields of research bearing directly or remotely on nature-study and biology took part in congratulating the guest of the evening on his having obtained one of the blue ribbons of scientific merit—among the said representatives being Signor Francesco Brioschi, the eminent mathematician, who presides over the Accademia dei Lincei, and Prof. Semeraro, rector of the University. The first to speak was the veteran professor of chemistry, Signor Stanislao Cannizzaro (himself a former recipient of Royal Society honours), who, in the name of the University of Catania, dwelt on the gratification felt by that seat of learning and shared by all others in Italy at the English recognition of their compatriot. After him came Signor Francesco Todaro, professor of anatomy at the Sapienza, whose speech was dedicated to an exposition of the motives that guide the Royal Society in awarding the Darwinian medal. A third speaker was Prof. Semeraro, rector of the University, who, in the name of the Senatus Academicus, thanked Prof. Grassi for the honour he had conferred on their common *alma mater*. Prof. Grassi's reply was exemplary for its modesty, its recognition of the brotherhood of science, its lofty view of the motives and methods of scientific investigation, and its bright forecast of the future. Referring to the aid, encouragement, and inspiration he had received from his academic colleagues and brethren of the biological laboratory, he dwelt with grateful insistence on the helping hand extended to him by Dr. Baccelli, who was present. The banquet closed in animated conversation, among the topics of which was the *rapprochement*, just signalised in Prof. Grassi's case, between British and Italian research."

The announcement made last week to the effect that Dr. Thorne Thorne is inspecting the vaccination systems abroad is confirmed by a statement in the *Times* that the Government has a full intention of introducing next Session a Bill to promote free vaccination throughout England on some such plan as obtains on the continent. In order that the Local Government Board should have details of the mode of dealing with this question abroad, a small committee, presided over by Dr. Thorne Thorne, principal medical officer of the Board, has been for the last fortnight in France and Belgium. The committee first visited Paris, where the members were shown over the Institut Vaccinal, affiliated to the municipality of Paris, and afterwards saw the mode of treatment at the Académie de Médecine, where vaccine lymph is distributed gratuitously, after admixture with glycerine, throughout France at the expense of the State. From Paris Dr. Thorne Thorne and his assistant travelled to Brussels, and were there shown over the Ecole de Médecine Vétérinaire, the State Department for Belgium, and afterwards the whole work of vaccination was explained at Dr. Janssen's Vaccination Department under the municipality of Brussels. It was intended to extend the inquiry, but, other medical foreign departments not being quite ready to receive the expert committee, Dr. Thorne Thorne has returned to London. The committee will start again in a couple of weeks for Germany, to examine the question there, and this will be of a more extended nature, as German vaccination depôts are more widespread.

The trial trip of the torpedo boat *Turbinia*, which has been built by the Marine Steam Turbine Co., Limited, for the purpose of testing the application to marine propulsion of the Hon. Charles Parsons' steam turbine engine, was a really remarkable performance. An account of this trip, which took place on the 15th inst., is given in the *Newcastle Daily Chronicle* for the 17th, from which we make the following extract:—"Several most successful runs were made, and the very high speed of 29·6 knots was attained over the measured mile. It is believed that this is a speed greatly in excess of anything that has ever been previously accomplished by a vessel of the small dimensions of the *Turbinia*, which is only 100 feet in length, 9 feet in beam, and has but 42 tons displacement when fully loaded. Indeed, the speed already attained upon this preliminary trial trip by this small boat nearly approaches the maximum limit of speed so far attained by the largest torpedo boat destroyers, which have more than twice her length and about six times her displacement. Having regard to the fact that this was only a preliminary trial, and that it was shown that there was a considerable reserve of power still to be called upon, it is anticipated that a still higher speed materially in excess of the remarkable result already obtained will eventually be realised. In any case, the obtained results as recorded above, are such as cannot fail to be of extreme interest to all naval architects and marine engineers." A correspondent writes:—"The circumstance that the time-honoured piston engine seems to be beaten for marine propulsion at high speeds by what may be looked on as a more primitive machine, is striking. The *unexpected* speed of all modern torpedo boats is indeed a matter of much interest to the students of even theoretical hydrodynamics."

The Congrès des Sociétés Savantes will be opened at the Sorbonne, Paris, on April 20, 1897, and will continue in session for three days.

Two of the three Royal Institution's Christmas lectures, on "Visible and Invisible Light," will be given by Prof. S. P. Thompson, F.R.S., on Tuesday and Thursday afternoons next week.

The following are among the papers to be read at the meetings of the Society of Arts after Christmas:—The roller boat of M. Bazin, by Émile Gautier; English orchards, by George Gordon; the prevention of fires due to leakage of electricity, by Frederick Bathurst; dairy produce and milk supply, by M. J. R. Dunstan; the transmission of power by alternating electric currents, by W. B. Esson; London water supply, by Prof. Percy F. Frankland, F.R.S.; the chemistry of tea, by David Crole; children's sight, by R. Brudenell Carter; light railways by Everard C. Calthrop; cycling—historical and practical, by George Lacy Hillier.

We regret to announce the death of Mr. Sidney Waters, a familiar figure at the Royal Astronomical Society, and the author of several interesting papers and charts. He was elected a Fellow of the Society in 1873, in which year he read two papers on the distribution of resolvable and irresolvable nebulæ, and the distribution of the clusters and nebulæ. A paper on the distribution of the stars in the southern hemisphere appeared in the *Monthly Notices* for 1878, and his last work consisted of two very fine maps showing the distribution of the nebulæ and clusters in Dr. Dreyer's Catalogue. Mr. Waters will be sorely missed and deeply regretted by every one who knew him.

A large meteor was seen to pass over New York City from west to east at twenty minutes past five on December 4, while it was still daylight. It was noticed by observers over a wide range of locality, from points nearly twenty miles north, to Staten Island on the south.

The New York Aquarium at Castle Garden was opened on December 10, with about one hundred species of fish already collected. The galleries will not be entirely finished for a month or two. The stock will be increased in the spring by importations from Florida, Bermuda, California, and elsewhere. Over 11,000 people visited the Aquarium on the opening day.

After conducting the *Zoologist* for exactly twenty years, Mr. J. E. Harting has resigned the editorship owing to increased demands upon his time, and in order to be able to devote himself to the preparation of new editions of some of his books on birds, and to complete an original work on "British Quadrupeds," for which he has been collecting material since 1874. The *Zoologist* was founded in 1843 by the late Edward Newman, who conducted it until his death in 1876, when Mr. Harting undertook to carry it on. There has thus been but one change in the editorship from its foundation until the present time. Some difficulty has been experienced in finding a competent successor, but it is now announced that the new editor is to be Mr. W. L. Distant.

The establishment of a big game preserve in British Central Africa has been noted by us upon several occasions. It is now stated that Mr. Alfred Sharpe, the Acting Commissioner, has just issued a series of regulations providing that on and after September 15 last a certain portion of the protectorate shall be "considered and treated as a preserve." In this district "it shall be illegal for any person or persons to shoot, trap, net, or in any way molest any description of wild game within such limits without a written permission from Her Majesty's Commissioner and Consul-General." The regulations further provide for the inspection and, if necessary, withdrawal of any licences granted by the Commissioner, and for the punishment of any breach of the regulations. The tract of country thus reserved is known locally as the Elephant Marsh, and lies on the Shire River above Chiromo. It abounds in buffalo, water buck, and zebra, but unless some such regulations as those just issued were passed it is believed that at the rate at which they were being shot all these animals would have practically disappeared in a few years.

The *Bulletins* of the Constantinople Meteorological Observatory for March and April contain a study, by Dr. G. Agamennone, of an earthquake felt in the north-west of Asia Minor on April 16. The observations forwarded to the central office are neither numerous nor detailed, and it has not been found possible to determine the origin even approximately. Considerable damage was, however, produced in the village of Amed (lat. 39° 17′ N., long. 29° 15′ E.), and it is probable that the epicentre was not very distant from this place. The shock was felt over a district about 325 km. in diameter, and nearly 80,000 square km. in area. A good time-record was obtained at Constantinople, but the pulsations do not appear to have affected distant pendulums, unless a small movement recorded by the Vicentini microseismograph at Padua can be referred to this earthquake.

The Pilot Chart of the North Atlantic Ocean for the month of December, issued by the Washington Hydrographic Office, shows that between the Azores and Newfoundland much bad weather was experienced during November, and that fresh to strong gales, principally from the west, followed each other in quick succession over the area between the Grand Banks and the British Isles. The subject of floating derelicts as a danger to navigation is again being brought prominently forward, and the chart plainly shows that the advent of the stormy season has considerably increased the number of the derelicts. Between the south-east coast of the United States and Bermuda the number of abandoned ships, mostly of the schooner build, is particularly noticeable. The ocean was free from ice east of Newfoundland, and the month was remarkable for the small amount of fog reported.

The last number of the *Mittheilungen von Forschungsreisenden und Gelehrten aus den deutschen Schutzgebieten*, besides a map of the southern part of Togoland with valuable geographical notes appended, contains some important contributions to our knowledge of the meteorology of German possessions in Africa. Observations made at five stations in the Kamerun district during 1894 and 1895 are discussed, one important result being to bring out Debundja (lat. 4° 8′ N., long. 9° 0′ E.) as the wettest station in all Africa, and to place it only second to Cherrapunji in the world, with a mean rainfall of somewhere about 350 inches. As Debundja stands almost at sea-level, the rainfall on the hills above it, exposed as they are to the full effect of the sea-breeze, is probably considerably greater. In September 1895 alone, 74 inches were measured at Debundja, including one record of 7·40 inches in 24 hours. Another paper gives an excellent summary of existing observations of rainfall in German East Africa.

In connection with the recent important investigations on the artesian waters of Queensland, Mr. Gibb Maitland, of the Geological Survey of that colony, has contributed to its Royal Society a review of the structure of artesian "basins" in North America. Nowhere in this area, with one possible exception, are the water-bearing rocks disposed in those ideal basins that do duty in the common text-book diagram. On the contrary, they have a uniform dip, so as to form only the half of a syncline, and the water, as in Queensland itself, is discharged either into the sea or into important inland springs.

A recent number of the *Centralblatt für innere Medicin* contains a notice of some further investigations by A. Pfuhl and K. Walter on the presence of influenza bacilli in the central nervous system. Pfuhl's previous identification of these bacilli in the central nervous system, and his contention that they are always to be found there in cases of influenza which have ended fatally, have received confirmation from these researches. It is, however, pointed out that along with the influenza bacillus large and small streptococci, as well as bacteria, associated with putrefaction, are found. As the colonies of influenza bacteria isolated from the nervous system only develop very sparsely on artificial culture media, and might easily escape recognition in the presence of other bacteria, Messrs. Pfuhl and Walter recommend that their cultivation should be carried out on perfectly clear agar-agar, the condensed water from which has been got rid of by keeping it in a slanting position for two or three days in the incubator, after which human or pigeon's blood is spread over the surface. It is best to discard tubes and employ instead dishes or plates, so as to increase the surface area of the culture material, and the latter should be inoculated by making several streaks with a very fine platinum needle containing the substance to be examined. In this manner all the colonies which subsequently develop can be closely watched under the microscope, and the identification and isolation of the influenza bacillus is materially assisted. That the influenza bacillus, and not the other bacteria found with it, is the actual cause of the disease, has been shown by Nauwerk, who described a case which ended fatally where influenza bacteria and no other varieties were present in the nervous system.

Seekers after rare and valuable scientific books should obtain a copy of the Catalogue (No. 165) just issued by Mr. Bernard Quaritch, Piccadilly, London, W.

In his address as retiring President of the Botanical Society of America, delivered at the last annual meeting, Prof. W. Trelease considered the subject of "botanical opportunity," and pointed out the difference between the conditions which controlled and made possible scientific work, even a few years ago, and those which prevail to-day. The address is printed in full in the *Botanical Gazette*. In it, what is referred to as "botanical opportunity" is considered under the two-fold head of the opportunity of endowed institutions and the opportunity of individual workers. Under the first head the equipment of colleges and research laboratories is passed in critical review, and suggestions are made as to the necessary limitations of such equipment and the provision which may be made for securing its fullest use, both for instruction and investigation. As to the opportunity of the individual, it is shown that breadth of foundation and a well-conceived and studiously followed plan of work, with system in all of the steps taken, can hardly fail to lead to success in the long run. A considerable portion of the address is given to a consideration of the subject of publication, as viewed from the standpoint of the administrator of a research institution and the student seeking a medium for the publication of the results of his work.

The additions to the Zoological Society's Gardens during the past week include a Rufous Rat Kangaroo (*Æpyprymnus rufescens*) from New South Wales, presented by Captain N. Allen; a —— Squirrel (*Sciurus*, sp. inc.) from Java, presented by Captain G. C. Candy, ; a Levaillant's Cynictis (*Cynictis levaillanti*) from South Africa, presented by Mr. Joseph Francis; eleven Harvest Mice (*Mus minutus*) from Surrey, presented by Captain Salvin; three Herring Gulls (*Larus argentatus*), British, presented by Mr. J. W. Wilkes; two Black-bellied Sand Grouse (*Pterocles arenarius*) from Spain, presented by Mr. Gerard S. Torrens; two Nicobar Pigeons (*Calœnas nicobarica*) from the Indian Archipelago, a Canarian Pigeon (*Columba laurivora*) from the Canary Islands, deposited; three Varied Field Rats (*Isomys variegatus*), three Larger Egyptian Gerbilles (*Gerbillus pyramidum*), nine Lesser Egyptian Gerbilles (*Gerbillus ægyptius*), three Long-eared Hedgehogs (*Erinaceus auritus*), forty-six Egyptian Geckos (*Tarentola annularis*), five Fan-footed Geckos (*Ptyodactylus lobatus*), a Grey Monitor (*Varanus griseus*), five Horned Cerastes (*Cerastes cornutus*), six Square-marked Toads (*Bufo regularis*) from Egypt, received in exchange.

OUR ASTRONOMICAL COLUMN.

Mountain Observatories.—The great increase in size of the apertures of instruments for use in astronomical research, has led astronomers to look further afield for spots on the earth's surface where the atmospheric conditions are most favourable for the work to be satisfactorily accomplished. The neighbourhood of large towns is now generally conceded to be no place for a big refractor or reflector, although occasionally a very fine night may be luckily secured. For the study of planetary details, and the taking of long-exposure photographs, and other kinds of work, a steady atmosphere is a necessary essential. In order that the stellar images may be still and devoid of that flickering and movement which is only of too common an occurrence, the atmosphere itself must be to a certain extent in stable equilibrium, and the layers at rest one above the other. There are not, however, many places where these conditions are fulfilled. In fact there are no such spots where perfect stillness reigns supreme, but some are better than others in this respect. The question then is, where are such localities for which the astronomer, armed with a powerful instrument, may make his stand? We may answer this question by saying that up to the present time very few have been found, although search is more or less continuously being made. In America we know that some observers are at work with their instruments of large power, in an atmosphere which is at times almost perfect. Not only is the air in that quiet state of equilibrium that is so necessary, but they are blessed with long spells of continuous fine weather. Any one who wishes to find out for himself what are the essentials to "good seeing," how far we have progressed in the construction of mountain observatories, and, further, where those already set up are situated, cannot do better than consult Prof. Holden's contribution to the Smithsonian Miscellaneous Collection. The writer there has massed together a great amount of material concerning those situated in America and Europe, and has also added greatly to the description of them by the insertion of numerous illustrations. We may, however, mention that meteorological stations at high or moderately high altitudes are also included; but these must, as we all know, be forerunners of those equipped for the special study of astronomy.

Observations of Saturn.—In the study of planetary detail our atmosphere plays a most important *rôle*, and, as we have said in the preceding note, some places are more suitable for such observations than others. Some very interesting observations given in the *Astronomischen Nachrichten* (No. 3390) serve to show that the same observer, making similar observations at two different stations, not of course simultaneously, finds really marked differences in powers of seeing. Herr A. Anton Wonaszek records his visit to the Manora Observatory, where Herr L. Brunner is at work. The objects looked at were the planets Mercury, Venus, Mars and Saturn, and Herr Wonaszek expresses astonishment at the great amount of detail that can be observed in the pure air of Lussin. As regards Saturn, the markings looked at by both these observers were the dark and light spots situated on the disc. Both made independent drawings of these (illustrations of which are given in the *Astronomischen Nachrichten* referred to), with the result that in most respects they are very similar. Herr Wonaszek, however, finds out that Herr Brunner's eyes are capable of detecting more quickly the bright spots, while his own are more sensitive to those of a darker shade. With a 7-inch refractor situated at Kis-Kartal, he says that his numerous observations of Saturn do not show the great amount of detail that he recorded at Lussinpiccolo, although, by good atmospheric conditions, he is able to see a great deal. From the drawings which he gives, it is seen at a glance that the spots referred to above are seen at his observatory somewhat with difficulty, and are not so clearly defined as was the case at Lussinpiccolo. Both sets of observations, however, give one a good idea of these curious spots, which are not restricted alone to the equatorial regions, but occur towards the poles. From these drawings, however, no dark spot attains any great distance from the equator. The observations referred to above were made during the month of August last.

Karlsruhe Meridian Observations.—The fifth volume of the "Publication of the Grossherzoglichen Observatory of Karlsruhe" contains the observations made with the meridian circle, and includes the positions of all these stars down to the 8th magnitude in the zone -0° to -7°, which were not observed in the preceding volume. The observations were made by Prof. Valentiner and Dr. Ristenpart, and number 8300. Volume iv. of the same publication contained 13,800 observations, so that the total number amounts now to 22,100, thus concluding the work in this zone. The programme was to observe each star six times, and this has been carried out with only a very few exceptions, the number of stars on the working list being 2700. The reduction of the observations was done throughout by Prof. Valentiner and Dr. Ristenpart.

At the completion of the work a thorough investigation of the division errors of the circle was made. This undertaking could not, as we are informed, be done earlier, as the *personnel* of the observatory was too limited in numbers.

The three sections into which the volume is divided are (1) observations with the meridian circle; (2) elements for the reduction of these observations; and (3) mean places of the southern stars observed in the years 1892-94, reduced to the epoch 1885·0.

In the preface Prof. Valentiner refers at some length to the late Ernst von Rebeur-Paschwitz, who was connected with the observatory from July 1884. Allusion is also made to the fact that this "Publication" is the last that will proceed from the Karlsruhe Observatory.

The new building that is being erected on the Königstuhl at Heidelberg will, no doubt, be soon ready for work; and being under better conditions in many respects, Prof. Valentiner will be able to continue his work with renewed zeal.

The Western Australia Government Observatory.—The decision of the Government of Western Australia to erect an observatory at Perth, at a cost of about 5000*l.*, was announced in these columns nearly a year ago (vol. liii. p. 280). The *Daily Chronicle* now notes that the Government Astronomer, Mr. W. Ernest Cooke, during his recent stay in England, was engaged in the purchase and inspection of the necessary instruments. The two principal instruments will be an astrographic equatorial and transit circle, in addition to which the observatory will also probably be furnished with a cœlostat. Mr. Cooke proposes to devote his energies mainly to the observation of fundamental southern stars. He will, in addition, take charge of the meteorology of the colony. From each of the meteorological stations a report will be telegraphed daily to the observatory, and with the help of this and other information supplied by the Eastern Colonies, a daily weather map of the entire continent will be issued, together with forecasts of the coming weather.